REMARKS

As a preliminary matter, Applicant traverses the outstanding Office Action in its entirety for containing many significant errors that make it difficult for Applicant to properly respond. For example, in Paragraph No. 1, the Examiner appears to be rejecting limitations from claims "3 and 7." Claim 3, however, was previously canceled, and is not even pending in the present Application. Additionally, on page 3, the Examiner asserts a rejection against claims 1 and 6-7 based on the Watanabe reference (JP 04-028020), but on page 5, the Examiner asserts that this same Watanabe reference was "not relied upon." Accordingly, the outstanding Office Action must be vacated, and at least corrected so Applicant may have actual notice of the grounds of rejection, if any, against the claims that are actually pending.

In an effort to expedite prosecution, Applicant will attempt to address the issues raised by the Examiner according to their best understanding of what the Examiner is trying to assert. The Examiner is respectfully requested to consider these remarks before issuing a corrected Office Action.

Claims 1 and 6-7 appear to stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner asserts that the limitation appearing in claims "3 and 7," namely, a function of a third order or higher with respect to time, is not enabled by the present Specification. The Examiner asserts that one skilled in the art could not "make and use the invention as claimed without undue experimentation." Applicant therefore traverses this rejection.

The rejection is particularly deficient because the Examiner does not assert what undue experimentation he personally believes would have to be performed. The present Specification describes a number of specific formulae on pages 25-27, and several of these formulae show functions of orders higher than the third. It is well within the skill of anyone in this field of art to simply plug in numerical values for the variables featured in these formulae, and obtain the results described in the Specification. It is a long-established principle that the mere act of plugging numerical values into an existing formula and calculating the results is not considered undue experimentation. Furthermore, page 12, lines 17-20 of the present Specification, as well as page 29, lines 9-18, clearly enable one skilled in the art to practice "third or higher order" functions shown, as well as functions of the "fourth-order or higher." Again, the present Specification clearly contains several pages of formulae featuring such higher order functions, and therefore this rejection should be withdrawn.

Claims 1 and 6-7 stand rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe. As discussed above, the Examiner has also indicated that this same reference does not read upon the present claims. Nevertheless, until the Examiner issues a corrected Office Action, Applicant is required to address both of these directly contradictory statements. Applicant therefore traverses the possible rejection based on Watanabe because the reference fails to disclose (or suggest) that a position trajectory output is defined by a function of third order or higher with respect to time, as in claim 1 of the present invention, as last amended.

The rejection is deficient on its face because it fails to take into consideration all of the actual language recited in claim 1. In the rejection, the Examiner only asserts that Watanabe teaches a "function of third order (cubic) or higher." Claim 1 of the present invention, on the other hand, defines a third order or higher function which is specifically recited to be with respect to time. The Examiner's remarks do not indicate that any consideration has been given to these clearly recited limitations. This omission from the remarks is significant, because Watanabe does not teach (or suggest) any such features.

The portion of Watanabe's Abstract that is cited by the Examiner fails to teach (or even suggest) that the described "cubic function" has any relation to time. For this reason alone, the *prima facie* case of anticipation fails. Figs. 2 and 4 of Watanabe even illustrate that this "cubic function" is not with respect to time, but in fact is specifically defined as being with respect to *position* ("x"). Accordingly, Watanabe actually teaches away from the present invention, and the rejection should therefore be withdrawn.

No reasonable interpretation of the Watanabe reference could come to the conclusion that Watanabe anticipates the present invention. Watanabe merely permits adjustment of a focus control when amplitude variations of a reproduction signal occur, typically by surface vibrations of the recording media. Watanabe's method detects a rotating position of the medium 10 and a pulse signal in synchronization with the rotation (obtained from sector mark detecting circuit 47). Results are entered into microcomputer 42, and the A/D converter 40 timing startup and rotating position signal amplitude are then measured. The amplitude variation is stored (in advance), or the available focus error signal amplitude

from subtractor 45 is measured, in order to correct the measured reproduction signal amplitude. This configuration focuses primarily on measured position parameters. It cannot anticipate the novel target trajectory control system of the present invention.

Watanabe does not disclose, for example, anything like the trajectory generating unit/step of the present invention. By basing the output position trajectory from this unit/step on time functions, the present invention is capable of achieving a focus control that moves the objective lens to more generally approach the targeted position, and with a smoother change in acceleration, thereby resulting in an attenuation or removal of undesirable resonant frequency components. These advantages of the present invention are submitted to the Examiner for illustration purposes only, in order to better emphasize how the novel features of the present invention, namely, a position trajectory output defined by the recited time functions, could not be anticipated by Watanabe.

Claims 1 and 6-7 also stand rejected under 35 U.S.C. 103(a) as being anticipated by Tanaka (JP 11-306551). Applicant respectfully traverses this rejection because a *prima facie* case of obviousness has not been established. Tanaka does not read upon the present invention, and the Examiner has demonstrated an impermissible use of hindsight to justify his rationale for modifying Tanaka. The rationale stated by the Examiner for making the proposed modification is also based on a clear misinterpretation of the present Specification. No teaching or suggestion has even been cited from the prior art to support the Examiner's assertion of what was "art-recognized equivalents" at the time of the invention.

The only cited support for the Examiner's assertion that trigonometric functions are "art-recognized equivalents" with third order or higher time functions actually comes – inappropriately – from the present Application itself, as indicated in the Examiner's remarks the last paragraph on page 4 of the outstanding Office Action. The Examiner is essentially asserting that the discoveries *made by the present inventors*, as clearly described in the present Application, are themselves the proof that such discoveries are "art-recognized equivalents." Such reasoning, however, is circular. "Art recognized equivalents" must have been publicly recognized at the time of the invention. Discoveries made by the present inventors though, are the invention. Such discoveries, by definition, could not yet be publicly recognized in the field of art. The portion of the Specification cited by the Examiner also never describes that the Examiner's proposed modifications to Tanaka were "well known" in the art at the time of the invention. Accordingly, by relying only upon the present Application itself to justify the proposed theory of obviousness, the Examiner has demonstrated a clear use of impermissible hindsight, and the rejection is deficient on its face for at least this reason, and must be withdrawn.

Furthermore, the portion of the present Specification cited by the Examiner does not describe the two function types at issue as being interchangeable embodiments. The cited text, for example, does not even describe trigonometric functions and third order or higher functions together in any single embodiment. The text only says that trigonometric functions "may be used as far as the second order differential of it is a continuous function." (Page 29, lines 16-18, emphasis added). The present claims, however, do not feature

functions of "second order." The present claims recite only functions of third order or higher. Third order functions may include second order differentials, but second order differentials will not automatically encompass third order function.

The Examiner has similarly misread the descriptions of fourth order or higher functions in the present Specification. The Specification simply does not describe fourth order (or higher) functions as being "equivalent" to trigonometric functions, as erroneously asserted by the Examiner. The Examiner has erroneously extrapolated the fact that the Specification claims several different embodiments of practicing the present invention, to also mean that such different embodiments are automatically *equivalent* to each other. This rationale though, is unreasonable. The mere fact that a patent application describes and claims several different embodiments of an invention, by itself, does not support the automatic conclusion that all such embodiments are "equivalent" to one another.

Section 2143.03 of the MPEP requires that the Examiner, when attempting to establish a *prima facie* case of obviousness, must first point to where each and every feature and limitation of the claimed invention is taught or suggested within the prior art. In the present case, however, this requirement has not been met. The Examiner has not cited to any teaching or suggestion within the Tanaka reference that indicates a position trajectory being defined by a third order function or higher with respect to time. Whether or not trigonometric functions may achieve similar *results* to the claimed third order or higher functions (which Applicant does not concede), the Examiner still has to show where the prior

art itself teaches or suggests such third order or higher functions, or else that the prior art teaches the equivalence asserted by the Examiner.

The Examiner's personal opinion, that Tanaka's trigonometric functions "would perform equally as well" as the claimed third order or higher functions, is irrelevant to the establishment of the *prima facie* case of obviousness. The Examiner still must be able to show where the art itself supports his personal opinion. Again, the disclosure of the present Application may not be used as the sole basis to support the Examiner's personal opinion, because the portions of the disclosure cited by the Examiner are not included in the relevant description of the prior art. Because no teachings or suggestions have been identified from any of the cited prior art references to support the Examiner's rationale for modifying Tanaka, this rejection is also deficient on its face, and must be withdrawn.

Similar to the discussion above, Tanaka simply could not anticipate or render obvious the present invention. Tanaka relates to a device that merely pulls in a focus servo, and then drives to a pickup a signal of which the voltage varies sinusoidally. The lens velocity then will also vary sinusoidally in response to the voltage of the driving signal. These variances in this system, however, will also result in variance in the ability to bring the focus closer to the recording medium, which is undesirable. The present invention, on the other hand, will not suffer from such disadvantages. The present invention is capable of controlling the exact velocity of the focusing servo, and will therefore not be dependent on all of the variables that can affect the focus control in Tanaka, such as the amount of disk

surface vibration, the rotating period, and the amplitude of sinusoidal focus control, its period, and its phase.

Moreover, unlike in with the Section 102 reference based on Watanabe, discussed above, the advantages realized by the present invention over Tanaka are directly relevant to rebutting even a proper *prima facie* case of obviousness, could one be asserted. Applicants nevertheless submit that no such *prima facie* case has been established, because Tanaka does not teach or suggest all of the limitations actually claimed. These unchallenged advantages of the present invention though, further demonstrate how the Examiner's proposed modification of Tanaka simply would not have been obvious to one of ordinary skill in the art. Accordingly, the Section 103 rejection based on Tanaka is further traversed for at least these additional reasons.

For all of the foregoing reasons, Applicant submits that this Application, including claims 1 and 6-7, is in condition for allowance, which is respectfully requested. The Examiner is invited contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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